01-26-09

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

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| ---- In the Matter of ---- | ) | Docket No. 2008-0273 |
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| PUBLIC UTILITIES COMMISSION | ) | |
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| Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs | ) | |
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PUBLIC UTILITIES COMMISSION

HAWAII RENEWABLE ENERGY ALLIANCE RESPONSE

TO

COST DATA FORMS IN APPENDIX A

AND

NON-LEGAL QUESTIONS IN APPENDIX C

OF

THE NATIONAL REGULATORY RESEARCH INSTITUTE SCOPING PAPER

AND

CERTIFICATE OF SERVICE

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THE NATIONAL REGULATORY RESEARCH INSTITUTE SCOPING PAPER

In response to the Commission's letter, dated December 11, 2008, the Hawaii Renewable Energy Alliance ("HREA") respectfully offers in Attachment I its response to the cost data forms in Appendix A and the non-legal questions in Appendix C of the National Regulatory Research Institute (NRRI) scoping paper titled *Feed-in Tariffs: Best Design Focusing Hawaii's Investigation* (Scoping Paper).

# Attachment I

**HREA RESPONSE**

**to**

**COST DATA INFORMATION REQUESTS IN APPENDIX A**

**AND**

**NON-LEGAL QUESTIONS IN APPENDIX C**

**OF**

**THE NATIONAL REGULATORY RESEARCH INSTITUTE SCOPING PAPER**

# Appendix A: Cost Data Forms

(Responses are due in 45 days.)

# PBFiT Supporting Cost Information

**(Submitted by ______________________________)**

*Responses should reflect typical costs and operations for projects of the stated class and not those for a specific project. All costs should be in 2009 dollars and reflect the unique cost characteristics of developing projects in Hawaii.*

**HREA Response[1]:**

HREA respectfully declines at the present time to provide the requested PBFiT Supporting Information for the following reasons:

1. Detailed project cost data, including appropriate profit margins, are "confidential" and subject to approval of system integrators, developers, and several suppliers for each of the PBFiT Technologies. Thus, we cannot release these data at the present time;
2. It may be possible for us to release these data at a future time under a protective order to the Commission and the Consumer Advocate;
3. However, we question the value of the provision of the requested data which could be for both small and large projects;
4. First, with respect to small projects (≤500 kW), we support options for customers to net meter or PBFiTs;
5. Second, with respect to large projects (≥500 kW), we support implementation of PBFiTs, in addition to retention of exemptions from the competitive bidding framework. However, given the paucity of large projects currently, we question the value of cost data from these "early adopter" projects in setting fair PBFiT rates; and
6. We support instead the approach outlined below to establish initial PBFiT rates.

[1] For convenience, the detailed Appendix A Supporting Cost Information questions are not included here.

HREA respectfully proposes that the Commission set PBFiT rates that are fair and designed to help move the market. At the present time and for the following rationale, HREA proposes that PBFiTs be established for ONLY photovoltaic ('PV") and concentrating solar power ("CSP"):

1. These technologies, which are commercial and under development in Hawaii, have high installed costs and therefore are examples of technologies suitable for PBFiTs;
2. These technologies are well-known to HECO, which has worked closely with industry on power purchase, interconnection and net metering agreements;
3. Developers are familiar with current permitting processes and generally do not see permitting process as a barrier; and
4. PBFiTs, as part of universal or standard contracts, will help facilitate a more rapid financing, installation and operation of these technologies in Hawaii.

HREA would like to make the following observations and recommendations about the need at the present time for PBFiTs small PV and CSP and for other technologies:

1. We support for retention of net metering for small projects (≤500 kW) for customers that want to off-set a portion up to their entire load. This applies to all currently net metered technologies (solar, wind, biomass and hydro). On the other hand, PBFiTs will be the likely choice for customers that want to be net energy producers; and
2. For other renewable technologies in the 500 kW to 5 MW range, we support <u>retaining</u> and <u>expanding</u> the project size range for exemption from the competitive bidding framework. Thus, renewable project developers could negotiate power purchase agreements with the utility. To be clear, at the present time, we do not believe the other technologies would be appropriate for PBFiTs given that their individual project requirements and values would be hard to capture within a PBFiT format.

Given the above, HREA offers the following table of proposed PBFiT rates for PV and CSP by island and size. We believe the proposed rates are fair and will help to move the market. We are also sanguine regarding the other details of the PBFiT that need to be agreed upon.

**Table 1. Feed-In Tariff Proposal for PV and CSP**
**(without state tax credits; with federal investment tax credit)**

| Island | ≤ 500 kW | 500 kW – 5 MW | 6 to 10 MW | 11 to 20 MW |
|---|---|---|---|---|
| Oahu | 33 to 37 | 28 to 32 | 25 to 29 | 22 to 26 |
| Maui | 35 to 39 | 30 to 34 | 27 to 31 | 25 to 29 |
| Molokai | 38 to 43 | 33 to 37 | | |
| Lanai | 40 to 44 | 35 to 39 | | |
| Hawaii | 37 to 41 | 32 to 36 | 29 to 33 | 27 to 31 |

**Assumptions:**

1. Values are given as a range of cents/kWh;
2. Includes permitting and interconnection costs based on independent interconnection studies contracted by HECO;
3. Includes total installed cost with profits and warranty costs;
4. O&M is covered under a separate contract with the customer;
5. HREA is recommending that the Commission consider exempting solar projects up to 20 MWs from competitive bidding;
6. Projects up to 500 kW could elect a:
   a. net metering agreement in; or
   b. a feed-in tariff.

   Note: in both cases, the projects would support of an overall zero net energy building goal, and the benefits of net metering or feed-in tariffs are assumed to be equal to or greater than the potential costs to non net-metered or feed-in tariffed customers
7. Projects for FiTs assume that the customer is a net power producer. The quantity of projects on a given island would be limited only by distribution circuit limits, initially at 30% of the line capacity and increased over time based on a collaborative study including HECO, NREL and industry

# Appendix C: Questions

***The Commission should direct the parties to respond to the following questions. Please provide detailed responses including supporting calculations and assumptions, underlying reasoning, and supportive citations. Responses to the threshold legal issues are due within 30 days. Responses to all other questions are due in 45 days.***

**<u>Other Threshold Issues</u>**

1. Feed-in tariffs, if approved by the Commission, would join an array of legislative and regulatory initiatives to boost production of renewables in Hawaii. Those initiatives include PURPA, the renewable portfolio standard, net metering and various distributed generation actions. Are there overlaps, redundancies, gaps among these multiple initiatives? What is the independent purpose of each of these, in relation to the others?

**HREA Response:**

HREA would characterize PURPA as an incentive (enacted by the U. S. Congress in 1978 in response to the first Arab oil embargo of 1973) for the diversification of the fuel mix in the U. S. electrical generation sector. Subsequently, states implementing renewable portfolio standards ("RPS") have placed a specific goal or a mandate on utilities for the acquisition of renewables. HREA believes, in general, that RPS has strengthened the goals of PURPA.

Additionally, HREA would characterize RPS as an "umbrella" policy. Thus, under the umbrella and supporting RPS, are a number of other policies, such as net metering, tax credits and other incentives, various distributed generation actions, and now potentially feed-in tariffs. Feed-in tariffs have also been used in Europe in lieu of RPS and tax credits.

Feed-in tariffs are essentially a special type of power purchase agreement ("PPA") with pre-set specific payment rates, while payment rates under PURPA-PPAs are negotiated on a case-by-case basis.

Yes, there are a number of potential overlaps, redundancies and gaps with all the available or potentially-available initiatives. However, HREA believe the key to evaluating the need for feed-in tariffs in Hawaii is whether the tariffs should be implemented in lieu of other price-support ("market-pull") and contractual mechanisms or in concert. We prefer the latter.

**Process and General Feed-in Tariff Issues**

2. Please explain the criticality of completing the "best-design" phase of this investigation by March 2009 and having project-based FiTs in place by July 2009 as called for in the Agreement.

**HREA Response:**

PBFiTs are a means for accelerating the implementation of renewables in support of the state's energy goal to increase our use of indigenous resources. However, we are not convinced of the criticality of the instant docket's goals as stated above with one exception. Specifically, FiTs are a potential remedy for difficulties experienced with utilization of existing market incentives (i.e., specifically state tax credits) for PV and CSP projects. This has created uncertainty for potential buyers in the market. In addition, just the opening of the instant docket has created additional uncertainty and sales have slowed. Thus, we support the creation of FiTs as an option for buyers of larger systems in the most expeditious manner consistent with a thorough review and exercise of sound judgment.

3. Please explain why project-based FiTs are superior to other methods that require a utility to purchase renewable electricity.

**HREA Response:**

HREA does not believe FiTs are necessarily superior to other methods that require a utility to purchase renewable electricity. However, FiTs have shown to be effective in countries, such as Germany and others in Europe, that do not have a RPS or other mechanisms, such as tax credits, to encourage renewables.

We also believe RPS, when properly designed and implemented, and utilities are sufficiently motivated, feed-in tariffs are not needed. For example, Texas (a state where the utilities have been restructured) has a very effective RPS, which is implemented via competitive bidding.

4. Please quantify the costs over avoided costs of an open-ended PBFiT program assuming the utility meets the RPS goals set forth in the Agreement.

**HREA Response:**

HREA is not sure it understands the intent of this question. If the intent of the question is whether it is a good idea to design a PBFiT program with payments over the conventional avoided cost of the utility (or retail rates for that matter, if desired), then the answer is "yes." In fact, that is why FiTs came into being. Specifically, where retail rates and wholesale rates are not sufficiently high enough to encourage retail and wholesale renewable applications respectively, FiTs create a set of market prices where goals for the increased use of renewables can be met.

If the intent of the question is to estimate literally the amount of costs over avoided costs of a PBFiT program, to respond would be extremely difficult at the present time, as a number of assumptions would need to be made, including what technologies, number of installations, PBFiT payment rates and any specific market penetration CAPS are to be imposed, and how to estimate avoided costs over time. Given time and resource constraints, HREA is unable to respond.

5. Please quantify the benefits of lowering oil imports, increasing energy security, and increasing both jobs and tax base for the state mentioned in the Agreement.

**HREA Response:**

Similarly to our response to question "4.", HREA is unable to respond except rhetorically – what would be the costs of not "lowering oil imports," etc.?

6. Is the goal to encourage as much use of renewable resources as possible as soon as possible, or is it to encourage the orderly introduction of renewable resources based upon cost effectiveness?

**HREA Response:**

HREA believes the answer is "yes' to both questions. And the way we believe this is possible is to focus on creating and implementing an appropriate methodology for encouraging renewables via PBFiTs and evaluating the potential synergy with existing policies.

7. How long a period should exist between mandatory Commission reviews of the PBFiTs?

**HREA Response:**

HREA recommends that the Commission review of a PBFiT on an annual basis, until such time that an annual review is not necessary.

**PBFiT General Design Issues**

8. Do each of the technologies listed as a renewable resource in the RPS legislation require a PBFiT?

**HREA Response:**

No

9. Should PBFiTs for certain technologies be established now while others are deferred?

**HREA Response:**

Yes

10. Should the Commission cap purchases under PBFiTs? If yes, what is the maximum amount? Should individual caps be set for each technology? What period should the cap cover? What is the measurement for the cap (e.g., dollars, percent of sales, kW, or kWh)?

**HREA Response:**

HREA does not believe there should be any CAPS on the PBFiTs as recommended by HREA in Appendix A. We believe there will be "technical" limits based on the results of interconnection requirements studies ("IRS") for both wholesale and retail applications, and reasonable distribution circuit feeder penetration limits in retail applications. At present time, we do not see a need to limit PBFiTs (again as we have proposed them) based on a cost, percent of sales, kW or kWh criteria. There does need to be discussion and agreement on the scope, cost and timeline for the IRSs.

11. What limitations exist for integrating renewable resources onto the grid? Should these limits affect the PBFIT design or caps, or are they just another cost that developers must consider?

**HREA Response:**

As noted in our response to item #10, HREA believes there are technical limits to integrating additional generation, certainly with the current utility systems. We believe, however, that current system limits (again as discussed above) will be identified in IRS studies and remedied, and can be identified and employed to allow increasingly higher limits of renewables on our island utility systems.

Regarding PBFiT design, there may need to be adjustments for those cases when grid upgrades are required, unless the utility covers those costs, e.g., under the Clean Energy Infrastructure Surcharge.

**Specific Tariff Design Issues**

12. How long should the Commission set for the PBFiT's term of obligation? Should it be different for different technologies? Is there a common basis (e.g., a conservative estimate of expected useful life) for establishing the term of obligation? On what basis should a utility pay for electricity after the term expires?

**HREA Response:**

HREA supports a 20 year term for all PBFiTs with an option to renew.

13. Should PBFiTs require the utility to purchase the project's gross or net output at the PBFIT price?

**HREA Response:**

HREA supports utility purchase at gross output, meaning the output on the utility-side of the revenue meter.

14. How should the utility determine the price paid for renewable energy not covered by a PBFiT (e.g., purchases above the cap or beyond the term of obligation)?

**HREA Response:**

HREA believes there are the following contractual and payment options: (1) net metering agreements, which are actually power exchange agreements and not power purchase agreements. Therefore, while net metering agreements value the renewable energy exchanged at the retail rate, power is not actually purchased; (2) negotiated payment rates on projects exempted from the competitive bidding framework, and (3) negotiated payment rates on winning projects from competitive bidding solicitations.

15. What inflation adjustment, if any, should the PBFiT include, using what base and indexes?

**HREA Response:**

HREA supports a set annual escalator, e.g., 2% a year.

16. What milestones (e.g., commercial operations) should the Commission set to determine eligibility for the PBFiT? Are Hawaii's RPS statute requirements an eligibility requirement? Should utility affiliates be eligible to receive the PBFiT price?

**HREA Response:**

HREA supports the evaluation of all of the renewable technologies as defined in Hawaii's RPS statute for PBFiTs. However, supports PBFiTs for only PV and CSP at the present time, as discussed in our response to Appendix A. In addition, it may be appropriate to consider development of qualification criteria for PBFiT system integrators and/or developers. However, HREA doesn't have any specific criteria to recommend at this time, and reserves the right to provide input at a later time.

17. Please comment on the need for stepped tariffs based upon location, size, fuel mix, and output.

**HREA Response:**

HREA sees a need for stepped tariffs based on location (ala "island") and size, as discussed in Appendix A.

18. Under what circumstances should the PBFiT price be time-differentiated?

**HREA Response:**

HREA does not see a need for time-differentiated tariffs at the present time. We reserve the right to reconsider this position, based on potential implementation of time-of-day utility rates.

19. How highly leveraged (i.e., bearing how much debt compared to equity) are these projects?

**HREA Response:**

HREA cannot comment on this question as project financing arrangements are confidential.

20. Does a PBFiT create a financing environment through a reliable revenue stream from the ratepayer to the investor, allowing for greater leverage and thus lower cost financing than would be available under an avoided-cost tariff?

**HREA Response:**

HREA agrees that a PBFiT can help attract financing capital by creating a known payment rate and together with estimates of project output, an estimated revenue stream. However, that by itself is not sufficient to secure financing. In addition, the interconnection agreement must have terms and conditions acceptable to financing entities. HREA notes that a negotiated levelized payment rate under our PURPA law could create a similar estimate of a revenue stream. Finally, PBFiTs do have the singular advantage of being pre-set and not subject to negotiation.

21. If the PBFiTs are to encourage early margin development of resources, does the reasonable return need to be set higher for these early tariffs? Are there reasons other than encouraging early development to set the profit higher, such as risks associated with early implementation? Is this true across all project classes?

**HREA Response:**

HREA would agree that "early margin development of resources" can benefit from higher payment rates that can be justified by higher risks generally associated with "early market entry projects." In HREA's opinion, these risks do vary depending on a number of factors including the technology, its state of development, size, application and location.

In providing our recommendations in Appendix A, we believe both PV and CSP are commercial technologies that can contribute to Hawaii's energy needs and would benefit from an appropriately designed and implemented PBFiT program.

22. Does the current "credit crunch" affect the financing costs, including expected profits by equity investors?

**HREA Response:**

HREA is uncertain as to whether the current "credit crunch" will affect financing costs. However, events leading up to the credit crunch had impacted the ability of developers to finance projects in Hawaii in 2008 due to the uncertainty of the availability of the federal investment tax credit ("ITC") and the increasing difficulty to monetize state tax credits. A measure of certainty has been gained with the extension of the ITC through 2016. However, while industry has recommended that the existing state Renewable Energy Technologies Income Tax Credit include a refundable option for commercial projects, this remedy is subject to a bill from the 2009 legislature and approval by the Governor.

That said, a combination of an appropriately designed and implemented PBFiT for PV and CSP (as discussed in Appendix A) and the federal ITC should attract financing.

**Related Issues**

23. Please provide a quantitative analysis demonstrating the public interest aspect of the concept that 10% of the utility's purchases under the feed-in tariff PPA should be included in the utility's rate base through 2015. In addition to the overall prudence of the rate base recommendation, please address the 10% and 2015 date included in the Agreement.

**HREA Response:**

HREA declines to provide a response to this item at the present time. We reserve the right to provide a response at a later time.

24. What is the appropriate rate of return for the PBFiT portion of rate base that consists of a mandated purchase with guaranteed recovery and no capital outlay? Are there preferable utility incentives, other than putting PBFiT revenues into the rate base, to encourage the development of renewable resources?

**HREA Response:**

HREA declines to provide a response to this item at the present time. We reserve the right to provide a response at a later time.

25. Should the PBFiT require developers to assign credits (e.g., investment tax credits, renewable energy credits, and carbon credits) earned from a project to the purchasing utility as a condition of receiving payments under the PBFiT? If not, how should these credits be included in the estimation of a typical project's cost?

**HREA Response:**

No. The developers should retain all initial rights to their projects, and, e.g., be allowed the option to market their renewable energy credits ("RECs") as they see fit. Regarding the determination of the appropriate PBFiT rate, HREA notes that Hawaii's RPS law does NOT require RECs for compliance. Specifically, compliance is currently based on the amount of energy purchased or produced by the utility, and renewable electricity energy as defined in RPS law, i.e., certain energy efficiency measures, off-set renewable technologies and customer-sited renewable DG.

DATED: January 26, 2009, Honolulu, Hawaii

President, HREA

## CERTIFICATE OF SERVICE

The foregoing HREA Response was served on the date of filing by Hand Delivery or electronically transmitted to each such Party as follows.

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